

proaching our own days, is a new example fitted to demonstrate, on the one hand, the existence of close relationships between the fauna of these isolated lands and the zoological population of the Australasian region, and, on the other, the complete separation of this fauna from that of the great African continent.

---

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

June 18, 1868.—Lieut.-General Sabine, President, in the Chair.

“Note on the Bloodvessel-system of the Retina of the Hedgehog.”  
By J. W. HULKE, F.R.S., Assistant-Surgeon to the Middlesex Hospital and the Royal London Ophthalmic Hospital.

The distribution of the retinal blood-vessels in this common British Insectivore is so remarkable that I deem it worthy of a separate notice: *only capillaries enter the retina.*

The vasa centralia pierce the optic nerve in the sclerotic canal, and, passing forwards through the lamina cribrosa, divide, at the bottom of a relatively large and deep pit in the centre of the intra-ocular disk of the nerve, into a variable number of primary branches, from three to six. These primary divisions quickly subdivide, furnishing many large arteries and veins, which, radiating on all sides from the nerve-entrance towards the ora retinæ, appear to the observer's unaided eye as strongly projecting ridges upon the inner surface of the retina. When vertical sections parallel to and across the direction of these ridges are examined with a quarter-inch objective, we immediately perceive that the arteries and veins lie, throughout their entire course, upon the inner surface of the membrana limitans interna retinæ, between this and the membrana hyaloidea of the vitreous humour, and that only capillaries penetrate the retina itself.

In sections of the retina across the larger vessels the membrana limitans may be seen as a clean distinctly unbroken line passing over the divided vessels, with which it does not appear to have any direct structural connexion. The relation of the hyaloidea to the large vessels seems to be more intimate; but its exact nature can be less certainly demonstrated, owing to the extreme tenuity of this membrane. In my best sections I saw the hyaloidea also crossing the large vessels, as does the limitans; but excessively delicate extensions of the hyaloidea appeared to me to lose themselves upon the vessels.

The capillaries, shortly after their origin, bend outwards away from the large vessels, and, piercing the retina vertically to its stratification in a direction more or less radial from the centre of the globe, and branching dichotomously in the granular and inner granule-layers, they form loops, the outermost of which reach the inter-granule layer. As they enter the retina, the membrana limitans

interna is prolonged upon the capillaries in the form of a sheath, which is wide and funnel-like at first, but soon embraces the vessels so closely as to become indistinguishable from their proper wall; so that, notwithstanding the existence of a sheath, there is no perivascular space about the retinal capillaries, such as His has described in the brain or spinal cord, and has stated to occur in the retina and elsewhere.

In all other mammals, except the hedgehog, as far as my present knowledge extends, the arteries, veins, and capillaries lie *in* the retina. In fish, amphibia, reptiles, and birds, however, as H. Müller and others (myself as regards amphibia and reptiles) have shown, the retina is absolutely nonvascular, the absence of proper retinal blood-vessels being compensated for in fish, amphibia, and some reptiles by the vascular net which in these animals channels the hyaloidea, and by the highly vascular pecten present in other reptiles and in birds. Thus it is possible to divide vertebrates into two classes, according as their retina is vascular or non-vascular; and these classes would be connected by the hedgehog, the larger branches of whose vasa centralia, lying upon the membrana limitans in intimate relation with the hyaloidea, represent the equivalent vessels of the hyaloid system, which forms so exquisite a microscopic object in the frog; whilst the capillary vessels channelling the retinal tissues occupy the same position which they do in most mammalia.

## MISCELLANEOUS.

### *On the Origin of the Name "Penguin."*

*To the Editors of the Annals and Magazine of Natural History.*

GENTLEMEN,—More than ten years ago it occurred to me that the name "Penguin" or "Pengwin," applied to certain sea-fowl which are unable to fly, was a corruption of "pen-wing" or "pin-wing," meaning a bird that had apparently undergone the operation of pinioning or "pin-winging," as it is, in at least one part of England, commonly called. Lately Mr. Henry Reeks, who has been successfully pursuing the investigation of natural history in Newfoundland, has kindly informed me that in that country the name "Penguin" used there to signify the *Alca impennis* of Linnæus, is invariably pronounced "Pen-wing;" and this fact seems to confirm the supposition I had formerly entertained. I shall be greatly obliged to you by allowing me to mention in your pages this suggestion, which, so far as I am aware, has not been before published, especially as neither of the only two derivations of the name which I have seen assigned—the first from the Latin *pinguedo* (fatness), the second from the Welsh *pen gwyn* (white head)—appears to me at all probable.

I am, Gentlemen,

Your obedient Servant,

Bloxworth, July 22, 1869.

ALFRED NEWTON.